



THE NAUTILUS.

Vol. XXXVIII

APRIL, 1925.

No. 4

ON A TANGANYIKA BEACH

BY CHARLES HEDLEY

It is not the sea, one told oneself; but the other self insisted that it was, pointing to the level horizon where sky and water meet, to the waves rippling with the familiar song upon the sand, to the wide beach overgrown with sea-convolvulus and even to the sea gulls flying overhead. A glimpse of reeds and papyrus growing off shore is a help to appreciate that this is indeed a lake.

Not being the sea, to what can it be compared? The lake front at Chicago is recalled by the beach, the waves and the horizon. But beyond the Tanganyika beach rise range beyond range till the eye rests on an eight thousand foot mountain in the blue and hazy distance. Happily does Burton's phrase of "the loveliest glimpses of the Mediterranean" express it. But against the Mediterranean background is set a foreground which might belong to New Guinea or Tahiti, a group of blacks at play upon the shore, hills sloping steeply to the sea, green with banana plantations, dotted with brown thatched huts and flagged with palms.

In clear weather, for now is the rainy season, the hills may be seen across the lake which is only forty miles wide, though it stretches north and south for 450 miles. The surface is

2500 feet above the sea while the depth is incredible; four thousand feet is a published record, but a Belgian officer informs me (I know not on what authority) that it extends half as far again to two thousand metres. The former record exceeds the depth of any lake in the world except Lake Baikal in Siberia.

Lake Tanganyika has the narrowest zone of internal drainage, the few small streams entering it being incapable of carrying down much sediment. The exit is a small stream which runs west to the Congo. This lake then has a promise of immortality beyond any other lake whose destiny is either to be filled in by tributaries or breached and drained by exit streams. Yet it was once larger, for all around are inland cliffs composed of lake deposit and separated by a level terrace from the water.

Lake Tanganyika lies in the Great Rift Valley of Africa. This is a huge crack in the crust of the earth which dates back at least to the Cretaceous epoch. It runs for several thousand miles from the Jordan Valley in Syria through the Red Sea, Lakes Rudolph, Tanganyika and Nyassa to Cape Corrientes in South Africa.

Water in the lower strata of the lake is said to be salt. Since more water is received and evaporated by the lake than is spilled into the Congo basin, the salinity of the lake is probably increasing. My neighbor at the hotel table tells me that even the surface water is unwholesome and should not be drunk unless boiled. He also cautioned me to be careful when collecting along the beach because there are numerous and ferocious crocodiles which often snatch and kill the negroes. So impatient was I to see at last the wonderful shells of Tanganyika in their home, that I could scarcely wait till I had secured a room at the hotel and despatched a meal, before making for the lake side. When I reached it there appeared along the water side a long swathe of storm-tossed shells. These were, if I remember right, the *Neothauma*, large and solid gasteropods, some purple, some yellow, some ovate conical, some with a broad sutural furrow that recalled Eburna. This, which perhaps is a derivative of *Vivipara*, is a dominant form and continued in great abundance as far as my promenade extended. It was obvious that the molluscs lived close by within the sweep of the waves.

The exit of the Lukuga River was not far off and as it seemed promising I walked across to it. Over a broad flood plain at the river bank were scattered great quantities of shells. Among them a large river mussel, *Iridina*, was conspicuous. On picking it up, there appeared a taxodont hinge, something strange to find in a river mussel. Where the shells were thickest I sat down to make a closer search. As I did so, I remembered being warned at the hotel that just here was where the biting flies might inflict the sleeping sickness on their victims and resolved not to linger long. The first thing I found was a large solid Melania-like shell, *Paramelania*, which brought the picture of it in Smith's paper at once to mind. Then I was rewarded with one after another of its associates. A Nassoid shell, *Edgaria*, was the most abundant; this seemed to exhibit endless variation of color, form and sculpture. There may have been several species in a handful that I gathered, but a hasty glance could distinguish no consistent features. A glossy white Naticoid was the next to attract attention, this and a rarer Crepiduloid species (*Spekia*) seemed the most un-lacustrine shells imaginable. Then I found a brown shell with a white zone, for all the world like a Planaxis, that on a coral beach would have appeared quite conformable. Most eccentric of all was a tiny white acicular shell (*Syrnolopsis*) like *Eulina* but with the plait of *Pyramidella*. These were quite common when the proper place was reached. Not one *Tiphobia* did I see; its absence is accountable by the deeper water that it is said to inhabit. Mixed with the thalassoid shells were a few ordinary fluviatile types, Lymnæa, Planorbis and Ampullaria. There were also a few land shells carried down by the storm water.

This hasty glimpse at the Thalassoid fauna of Tanganyika was ample reward for much wearisome travel. An impression remained of the extraordinary dissimilarity between this and any other fauna, and hence of its probable extreme antiquity. The lake presents itself as a refuge where biological conditions may have remained unchanged for a prolonged period. While the thalassoids slept in Tanganyika their contemporaries may have perished elsewhere through foreign competition and change of temperature and of other physical conditions. Elsewhere liv-

ing fossils like Nautilus and Trigonina linger here and there, but in Tanganyika we seem to see not odd members but a whole association of species preserved beyond the common span.

Albertville, Tanganyika, Congo-Belge, Central Africa.

February 9, 1925.

NOTES ON THE NOMENCLATURE OF SOME OF OUR EAST AMERICAN
SPECIES OF PECTEN WITH DESCRIPTIONS OF NEW SPECIES

BY W. H. DALL

There has been in the past some confusion in regard to the names of our more common species of *Pecten*, and in revising the series in the National Museum, it seemed desirable to put them on a sound basis by scrutinizing carefully the original sources. This has led to the cleaning up of some doubtful points as will be seen by the following data.

Pecten (Placopecten) grandis Solander

Ostrea grandis Solander, Portland Cat., p. 50, No. 486; p. 99, No. 2168, 1786.

Ostrea magellanica Gmelin, Syst. Nat., p. 3317, 1792.

Pecten tenuicostatus Mighels, Proc. Boston Soc. Nat. Hist. IV, p. 41, pl. 4, fig. 7, 1842 (young shell).

Pecten fuscus Linsley, Am. Journ. Sci., vol. 48, p. 276, 1845 (nude name); Gould, Am. Jour. Sci., 2nd ser. VI, p. 235, fig. 6, Sept., 1848 (young shell). Not *fuscus* of Gmelin, 1792.

Pecten brunneus Stimpson, New England Shells, p. 48, 1851 (new name for *P. fuscus* Linsley).

Pecten (Placopecten) clintonius Verrill, Trans. Conn. Acad. VI, p. 261, 1884 (not of Say).

Pecten (Placopecten) grandis Dall, Trans. Wagner Inst. III, pt. 4, p. 727, 1898.

This species has been dredged in rather deep water from Labrador to points off Cape Hatteras, North Carolina.

There is a marked difference between varieties of this species; the young form has the radiating sculpture minutely imbricate, a feature which is sometimes persistent in the adult, while in the majority of specimens the imbrication is wanting after ado-